

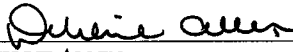
**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:	§	
<b>REDDY ET AL.</b>	§	Group Art Unit: <b>1755</b>
	§	
Serial No.: <b>10/759,678</b>	§	Confirmation No.: <b>8611</b>
	§	
Filed: <b>JANUARY 16, 2004</b>	§	Examiner: <b>PAUL D. MARCANTONI</b>
	§	
Title: <b>"SETTABLE FLUIDS COMPRISING PARTICLE-SIZE DISTRIBUTION- ADJUSTING AGENTS AND METHODS OF USE"</b>	§	Atty. Docket No: <b>HES 2003-IP-011937U1</b>
	§	

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**APPELLANTS' REPLY BRIEF PURSUANT TO 37 C.F.R. § 41.37**

This Reply Brief is submitted in support of Appellants' Notice of Appeal and Appeal Brief from the rejections in the Final Office Action dated July 10, 2008 (the "Final Office Action"), the Advisory Action dated October 1, 2008 (the "Advisory Action"), the Notice of Panel Decision from Pre-Appeal Brief Review dated January 14, 2009, and the Examiner's Answer dated May 11, 2009 (the "Examiner's Answer").

Pursuant to the mailing date of the Examiner's Answer dated May 11, 2009, the shortened statutory period for filing this Reply Brief is two months from the mailing of that

decision, and thus ends on July 11, 2009. Therefore, this Reply Brief is timely filed.

**I. STATEMENT OF THE REAL PARTY IN INTEREST**

The real party in interest is:

Halliburton Energy Services, Inc.

10200 Bellaire Blvd.

Houston, Texas 77072

by virtue of assignment by the inventor as duly recorded in the Assignment Branch of the U.S.  
Patent and Trademark Office.

**II. STATEMENT OF RELATED CASES**

There are no related appeals or interferences, to Appellants' knowledge.

### **III. STATUS OF THE CLAIMS**

The application as originally filed contained 122 claims. Claims 123-191 were previously added. Claims 13, 29, 40-122, 135, 171 were previously canceled. Claims 1-12, 14-28, 30-39, 123-134, 136-170, and 172-191 are finally rejected and appealed.

A listing of all appealed claims is provided in Appendix A of Appellants' Appeal Brief.

### **IV. STATUS OF AMENDMENTS**

No amendments have been filed subsequent to the final rejection by the Examiner.

### **V. SUMMARY OF THE CLAIMED SUBJECT MATTER**

The application contains three independent claims, namely claims 1, 123, and 159, which are the subject of this Appeal. The subject matter of these claims is summarized below.

With regard to aspects of the invention set forth in independent claim 1, discussion of the recited features of claim 1 can be found at least in the below cited locations of the specification. By way of example, certain embodiments of the present invention are directed to a method of cementing. (*See, e.g.*, Spec ¶ [0023] - [0024].) The method of cementing includes providing a cement composition comprising a hydraulic cement, a set retarder, water, and a particle-size distribution agent that comprises a cationic polymer. (*See, e.g.*, Spec ¶ [0024] - [0028].) The method of cementing further includes permitting the cement composition to remain in a slurry state for a period of time prior to the cement composition being activated. (*See, e.g.*, Spec ¶ [0038].) The method of cementing further includes activating the cement composition wherein activating the cement composition comprises adding an activator composition to the cement composition. (*See, e.g.*, Spec ¶ [0033] - [0035].) The method of

cementing further includes placing the cement composition in a subterranean formation penetrated by a well bore. (*See, e.g.*, Spec ¶ [0036] -[0037].) The method of cementing further includes permitting the cement composition to set in the subterranean formation. (*See, e.g.*, Spec ¶ [0036] -[0037].)

With regard to aspects of the invention set forth in independent claim 123, discussion of the recited features of claim 123 can be found at least in the below cited locations of the specification. By way of example, certain embodiments of the present invention are directed to a method of cementing. (*See, e.g.*, Spec ¶ [0023] - [0024].) The method of cementing includes providing a cement composition comprising a hydraulic cement, a set retarder, water, and a particle-size distribution agent that comprises a cationic polymer. (*See, e.g.*, Spec ¶ [0024] - [0028].) The method of cementing further includes permitting the cement composition to remain in a slurry state for at least 24 hours. (*See, e.g.*, Spec ¶ [0038].) The method of cementing further includes activating the cement composition wherein activating the cement composition comprises adding an activator composition to the cement composition. (*See, e.g.*, Spec ¶ [0033] -[0035].) The method of cementing further includes placing the cement composition in a subterranean formation penetrated by a well bore. (*See, e.g.*, Spec ¶ [0036] - [0037].) The method of cementing further includes permitting the cement composition to set in the subterranean formation. (*See, e.g.*, Spec ¶ [0036] -[0037].)

With regard to aspects of the invention set forth in independent claim 159, discussion of the recited features of claim 159 can be found at least in the below cited locations of the specification. By way of example, certain embodiments of the present invention are directed to a method of cementing. (*See, e.g.*, Spec ¶ [0023] - [0024].) The method of cementing includes providing a cement composition comprising a hydraulic cement, a set

retarder, water, and a particle-size distribution agent that comprises a cationic polymer. (*See, e.g.*, Spec ¶ [0024] - [0028].) The method of cementing further includes permitting the cement composition to remain in a slurry state for at least two weeks. (*See, e.g.*, Spec ¶ [0038].) The method of cementing further includes activating the cement composition wherein activating the cement composition comprises adding an activator composition to the cement composition. (*See, e.g.*, Spec ¶ [0033] -[0035].) The method of cementing further includes placing the cement composition in a subterranean formation penetrated by a well bore. (*See, e.g.*, Spec ¶ [0036] - [0037].) The method of cementing further includes permitting the cement composition to set in the subterranean formation. (*See, e.g.*, Spec ¶ [0036] -[0037].)

## VI. GROUNDS OF REJECTION TO BE REVIEWED

1. Whether claims 1-12, 14-28, 30-39, 123-134, 136-170, and 172-191 are unpatentable under 35 U.S.C. § 102(a) and §102(b) over U.S. Patent No. 4,393,939 by Smith *et al.* (hereinafter “*Smith*”) or U.S. Patent No. 3,508,407 by Booth (hereinafter “*Booth*”).

2. Whether claims 1-12, 14-28, 30-39, 123-134, 136-170, and 172-191 are unpatentable under 35 U.S.C. § 103(a) over *Smith* or *Booth* alone or in view of U.S. Patent No. 5,588,488 by Vijn *et al.* (hereinafter “*Vijn*”), U.S. Patent No. 6,087,418 by Yamashita *et al.* (hereinafter “*Yamashita*”), U.S. Patent No. 6,089,318 by Laramay *et al.* (hereinafter “*Laramay*”), U.S. Patent No. 4,131,480 by McCurrich *et al.* (hereinafter “*McCurrich*”), or the abstract of a technical article entitled “Effect of mix rheology, admixtures, and salts on physical and mechanical properties of hardened cement pastes” by Scheetz *et al.* (hereinafter “*Scheetz*”).

## VII. ARGUMENTS IN REPLY

### A. Interpretation of the Claims and Claim Terms

The Examiner's rejection of Appellants' claims stems in part from the Examiner's interpretation of certain terms in the claims. Appellants believe that the Examiner has incorrectly applied the standard for interpreting the meaning of claims during prosecution, resulting in a misinterpretation of the scope of the claims.

#### *i. The Standard for Interpreting Claims During Prosecution*

During examination, a term or a word used in a claim should be given its broadest reasonable construction in light of the specification as interpreted by one of ordinary skill in the art unless a specific meaning is assigned to the term by the applicant.<sup>1</sup> The "broadest reasonable construction standard" must be consistent with an interpretation that those skilled in the art would reach<sup>2</sup> as well as an interpretation that is consistent with the specification.<sup>3</sup> Two possibilities then exist for interpreting the proper meaning of claims during prosecution: 1) using the plain and ordinary meaning of the word unless, 2) the specification expressly provides a special definition for a term used in the claims.

The plain meaning of the words of a claim may be used unless the plain meaning is inconsistent with the specification or the understanding of one of ordinary skill in the arts.<sup>4</sup> The plain meaning of a word, also known as the ordinary and customary meaning, is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the

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<sup>1</sup> See MPEP § 2111; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316, 75 USPQ2d 1321, 1329 (Fed. Cir. 2005) (*en banc*) ("The Patent and Trademark Office ('PTO') determines the scope of the claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction 'in light of the specification as it would be interpreted by one of ordinary skill in the art.'").

<sup>2</sup> *In re Cortright*, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999)

<sup>3</sup> *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989)

<sup>4</sup> *See Id.*



invention.<sup>5</sup> As noted by the Federal Circuit, “[i]t is the use of the words in the context of the written description and customarily by those skilled in the relevant art that accurately reflects both the ‘ordinary’ and the ‘customary’ meaning of the terms in the claims.”<sup>6</sup> Evidence of the ordinary and customary meaning of a word may come from the specification, the prosecution history, and extrinsic evidence concerning scientific principles, the meaning of technical terms, and the state of the art.<sup>7</sup> If the evidence available from extrinsic sources, such as dictionaries, shows that more than one definition exists for a term, the intrinsic record (*e.g.*, the specification, prosecution history, etc.) must be used to identify which definition is consistent with the specification.<sup>8</sup>

When the applicant defines a word or term in the specification, the definition will control the interpretation of the word or term as used in the claims.<sup>9</sup> This result flows from the ability of the applicant to be his or her own lexicographer. The applicant may explicitly define a term in the specification so that one of ordinary skill in the art is given notice of the change in meaning.<sup>10</sup> In addition, the meaning of a word or term may be defined by implication due to the usage of the word or term in the context of the specification.<sup>11</sup>

ii. The Examiner Has Improperly Interpreted the Claim Terms

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<sup>5</sup> *Phillips*, 415 F.3d at 1313.

<sup>6</sup> *Ferguson Beauregard/Logic Controls v. Mega Sys.*, 350 F.3d 1327, 1338, 69 USPQ2d 1001, 1009 (Fed. Cir. 2003).

<sup>7</sup> *Phillips*, 415 F.3d at 1314.

<sup>8</sup> *See Brookhill-Wilk I, LLC v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1300, 67 USPQ2d 1132, 1137 (Fed. Cir. 2003).

<sup>9</sup> *See* MPEP 2111.01; *see also Toro Co. v. White Consol. Indus. Inc.*, 199 F.3d 1295, 1301, 53 USPQ2d 1065, 1069 (Fed. Cir. 1999).

<sup>10</sup> *See In re Paulsen*, 20 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994).

<sup>11</sup> *Phillips*, 415 F.3d at 1303.

The Examiner has continued to maintain a rejection of the claims based on a misinterpretation of the terms in the claims. Specifically, throughout the prosecution of the application, the Examiner has improperly interpreted the meaning of an activator and an accelerator leading to the rejections of the claims and the present appeal. In addition, the Examiner's Answer contains a misinterpretation of Appellant's use of the term "period of time."

**a. "Activator" and "Accelerator"**

Appellants have maintained through the prosecution of the present application that an activator is distinct from an accelerator. The Examiner has improperly stated that the terms "activator" and "accelerator" are the same. See Examiner's Answer at 19. Appellants submit that the "activators," as described in the present specification and claims, are substantially similar to what are generally referred to in the art as "accelerators." However, Appellants respectfully assert that one of ordinary skill in the art would recognize that the term "accelerator" is generally used to refer to a particular composition that may be added to a cement composition not comprising a set retarder at the time the composition is added (even if a set retarder should be added later), while the term "activator" is generally used to refer to the same composition when it is added to a cement composition comprising a set retarder. In other words, an "accelerator" is a composition that increases the rate of a chemical reaction, which requires that the reaction is already proceeding<sup>12</sup>. An "activator" is a composition that starts a stalled reaction<sup>13</sup>. While the composition can be the same in both cases, the specific use determines which term would apply. Thus, Appellants have used these terms consistently in the specification and during the prosecution of the application. Further, the use of these terms is consistent with the usage of one

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<sup>12</sup> See e.g., *The Condensed Chemical Dictionary* 3, (8th ed. 1971).

<sup>13</sup> See *id.* at 16.

of ordinary skill in the art at the time the application was filed, making the ordinary and customary meaning the same as the definition presented by the Appellants.

The Examiner has presented no factual evidence of a contrary use by one of ordinary skill in the art in the intrinsic record or from any extrinsic source. The Examiner's contention that an accelerator and an activator are the same is therefore unfounded.

**b. Water Is Not an "Activator"**

Appellants have maintained that water is not an activator or an accelerator. Primarily, Appellants have provided a definition of an activator in the specification. In paragraph [0033] of Appellants' specification it is stated that "activator compositions of the present invention generally comprise a mixture of at least one alkali or alkaline earth metal hydroxide, and a trialkanolamine." As the Appellants have defined the term "activator composition" in the specification, the definition will control the interpretation of the word or term as used in the claims. Even if the Examiner does not consider this definition sufficient to give notice to one of ordinary skill in the art, the meaning of an "activator composition" may be defined by implication due to the usage of the term in the context of the specification. Appellants' definition as provided in the specification excludes the possibility that water would qualify as an activator composition.

Should the Appeals Board find that Appellants' definition is not explicitly disclosed in the specification, Appellants note that the term "activator composition" should at least be interpreted according to its ordinary and customary meaning. The ordinary and customary meaning of "activator composition" is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention. As known in the art, an

activator composition is a chemical or composition that is added to a cement slurry or cement composition to cause the composition to set. As noted above in Section VII.A.ii.a, an activator starts a stalled or stopped reaction. The reaction that was stalled in this case would have been the hydration reaction of the cement with water. This meaning is consistent with the meaning given to the term in the specification. Throughout Appellants' specification, an activator composition is described as a composition that is added to a cement composition or slurry that already contains cement and water in a hydration reaction that is stalled, thereby causing the cement composition to set. *See, e.g.*, Specification at ¶¶ [0003], [0027], [0033]- [0037], and [0067]. As one skilled in the art would recognize, water is already present within the cement composition and does not function as the activator.

As noted by the Federal Circuit, if the evidence available from an extrinsic source, shows that more than one definition exists for a term, the intrinsic record (*e.g.*, the specification) must be used to identify which definition is consistent with the specification.<sup>14</sup> Even if the Examiner could factually support the definition of activator to include water, the inclusion of water in the definition of an activator composition would be inconsistent with the specification. Therefore, this definition cannot be used as the meaning in interpreting the claim.

The Examiner's contention that water is an activator is unsupported in the record. Appellants have provided evidence that the addition of water does not "activate" a composition. "If applicant adequately traverses the examiner's assertion of official notice, the examiner must provide documentary evidence in the next Office action if the rejection is to be maintained." *See* 37 C.F.R. 1.104(c)(2). *See also Zurko*, 258 F.3d at 1386, 59 USPQ2d at 1697 ("[T]he Board [or

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<sup>14</sup> *See Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1300, 67 USPQ2d 1132, 1137 (Fed. Cir. 2003)

examiner] must point to some concrete evidence in the record in support of these findings” to satisfy the substantial evidence test). The Examiner did not provide any evidence when requested by Appellants, yet still maintained the rejection based on water as an activator. If the examiner is relying on personal knowledge to support the finding of what is known in the art, the examiner must provide an affidavit or declaration setting forth specific factual statements and explanation to support the finding. *See* 37 C.F.R. 1.104(d)(2).” MPEP 2144.03(C) The Examiner has not shown that adding additional water to a cement composition already containing water would activate a cement composition, which is required by the recitation in the Appellants’ claims.

**c. “Period of Time”**

The Examiner has improperly interpreted the term “period of time” in the claims. In the Examiner’s Answer it is stated that “[i]n rebuttal, the appellants do not define a period of time in claim 1 so that can be one millionth of a second (which is a period of time) and thus the activator (or accelerator if it contains a retarder as appellants define it) will still be thus in a slurry state.” Examiner’s Answer at 20. Such a meaning of “period of time” is inconsistent with the use of the term in the specification and therefore represents an improper interpretation by the Examiner.

The meaning of the terms cannot be construed in a “lexicographic vacuum, but [must be interpreted] in the context of the specification and drawings.”<sup>15</sup> As noted in Appellants’ specification “[o]ne of ordinary skill in the art, with the benefit of this disclosure, will be able to determine the appropriate balance of set retarder and activator composition such that the

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<sup>15</sup> *Toro Co. v. White Consol. Indus. Inc.*, 199 F.3d 1295, 1301, 53 USPQ2d 1065, 1069 (Fed. Cir. 1999).

displacement fluid will not set for a desired period of time, and will then develop compressive strength thereafter.” Specification at ¶ [0037]. As a further example of a desired period of time, a method of the invention is described as “providing a cement composition comprising a hydraulic cement, a set retarder, and a particle-size distribution-adjusting agent; activating the cement composition; placing the cement composition in a desired location; and permitting the cement composition to set therein.” Specification at ¶ [0038]. The “period of time” necessary must therefore be at least long enough to allow the cement composition to be placed in a desired location prior to setting of the composition. Appellants request that the terms in the claims be interpreted according to the guidelines presented in the MPEP and the current judicial precedent.

**B. Claims 1-12, 14-28, 30-39, 123-134, 136-170, and 172-191 Are Not Anticipated by Smith or Booth**

The Examiner has rejected claims 1-12, 14-28, 30-39, 123-134, 136-170, and 172-191 under 35 U.S.C. §102(b) over *Smith* or *Booth*. Appellants respectfully submit that the cited references do not disclose each and every limitation of independent claims 1, 123, and 159 as required for anticipation under 35 U.S.C. § 102(b).

The Examiner’s rejection of claims 1-12, 14-28, 30-39, 123-134, 136-170, and 172-191 is premised on the interpretation of water as an activator. As discussed above, water cannot be an activator. Therefore, the Examiner’s rejection of these claims based on the cited prior art is improper.

Furthermore, the Examiner has not shown that either *Smith* or *Booth* disclose a step of “permitting the cement composition to remain in a slurry state for a period of time prior to the cement composition being activated” (claim 1), “permitting the cement composition to remain in a slurry state for at least 24 hours” (claim 123), or “permitting the cement composition to remain in a slurry state for at least 2 weeks” (claim 159). As discussed above, the Examiner

has misinterpreted the phrase “period of time.” As a “period of time” cannot refer to one millionth of a second, the references do not disclose or suggest that a cement composition remains in a slurry state prior to being activated. Accordingly, Appellants respectfully assert that neither *Smith* nor *Booth* has been shown to anticipate Appellants’ independent claims 1, 123 and 159.

Consequently, for at least the above stated reasons, Appellants respectfully submit that claims 1, 123 and 159 are not anticipated by either *Smith* or *Booth*. Moreover, since “a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers,” and since claims 2-12, 14-28, 30-39, 124-134, 136-158, 160-170 and 172-191 depend, either directly or indirectly, from claims 1, 123 and 159, these dependent claims are allowable for at least the same reasons. See 35 U.S.C. § 112 ¶ 4 (2005). Appellants respectfully request the Board to reverse the Examiner’s rejection of claims 1-12, 14-28, 30-39, 123-134, 136-170, and 172-191 under 35 U.S.C. § 102(b) as being unpatentable over *Smith* or *Booth*.

**C. Claims 1-12, 14-28, 30-39, 123-134, 136-170, and 172-191 Are Not Obviated by *Smith* or *Booth* Alone or in View of *Vijn*, *Yamashita*, *Laramay*, *McCurich*, or *Scheetz*.**

The Examiner argues that Appellants have argued each reference individually. See, e.g., Examiner’s Answer at 22. Appellants have not argued each reference individually, but rather have argued that none of the cited references disclose the elements of “permitting the cement composition to remain in a slurry state prior to the cement composition being activated” or “activating the cement composition wherein activating the cement composition comprises adding an activator composition to the cement composition.” In noting that none of the cited

references disclose the claim limitations, Appellants are arguing that the rejection as a whole (*i.e.*, the combination) does not obviate the claims.

The Examiner's rejection of claims 1-12, 14-28, 30-39, 123-134, 136-170, and 172-191 relies on the interpretation of water as an activator. As discussed above, water cannot be an activator. Thus, the Examiner has not established a *prima facie* case of obviousness. As discussed, in Appellants' Appeal Brief, neither *Smith* nor *Booth* disclose "permitting the cement composition to remain in a slurry state prior to the cement composition being activated" or "activating the cement composition wherein activating the cement composition comprises adding an activator composition to the cement composition." The Examiner has noted that the secondary references, including *Vijn*, *Yamashita*, *Laramay*, *McCurrich*, and *Scheetz*, were used to show that additives such as retarders, dispersants, and activators or accelerators are conventional additives for cement. *See* Final Office Action at 5. As such, these references are not used individually or in combination to teach the missing elements of "permitting the cement composition to remain in a slurry state prior to the cement composition being activated" or "activating the cement composition wherein activating the cement composition comprises adding an activator composition to the cement composition." Accordingly, *Smith* or *Booth*, alone or in view of *Vijn*, *Yamashita*, *Laramay*, *Scheetz*, or *McCurrich* do not obviate independent claims 1, 123 and 159. Since a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers," and since claims 2-12, 14-28, 30-39, 124-134, 136-158, 160-170 and 172-191 depend, either directly or indirectly, from claims 1, 123 and 159, these dependent claims are allowable for at least the same reasons. *See* 35 U.S.C. § 112 ¶ 4 (2005). Appellants respectfully request the Board to reverse the Examiner's rejection of claims 1-12, 14-28, 30-39, 123-134, 136-170, and 172-191 under 35 U.S.C. § 103(a).



## VIII. SUMMARY

In light of the foregoing, Appellants respectfully request that the final rejection of the pending claims should be reversed and the application be remanded for allowance of the pending claims, or, alternatively, remand the application for further examination if appropriate references can be found by the Examiner.

Appellants do not believe that a fee is associated with the filing of this Reply Brief. Should the Commissioner deem that any additional fees are due, the Commissioner is authorized to debit Baker Botts L.L.P.'s Deposit Account No. 02-0383, Order Number 063718.0359.

Respectfully submitted,

A handwritten signature in black ink that reads "Larissa Piccardo". The signature is written in a cursive, flowing style.

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